

In re Patent Application of:  
**CAWOOD ET AL.**  
Serial No. 10/781,317  
Filed: **FEBRUARY 18, 2004**

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#### REMARKS

The Examiner is thanked for the thorough examination of the present application. As an initial matter, the Examiner is asked to confirm consideration of the Thomas & Betts reference (BA) submitted with the IDS of March 8, 2004. A copy of the Thomas & Betts reference is submitted for the Examiner's convenience, along with the postcard receipt. In addition, it is noted that the IDS of August 12, 2004 has not been considered. A copy of the IDS is also submitted for the Examiner's consideration, along with the postcard receipt.

Independent Claims 1, 14, 27, 39, 49, 58 and 66 have been amended to more clearly define the invention over the cited prior art references. Dependent Claims 5, 11, 13, 19, 21, 25, 32, 34, 38, 48, 57, 61, 65, 70, 76 and 78 have been amended for consistency with the amendments to their respective independent claims. The claims are respectfully asserted to be patentable for the reasons provided in detail below.

#### I. The Amended Independent Claims

Amended independent Claim 1 is directed to an electrical connector for at least one electrical cable end comprising a conductor and an insulating jacket thereover. The claim recites that the electrical connector comprises a conductive body having at least one conductor receiving passageway therein to receive the conductor of the at least one cable end, with the conductive body also having at least one fastener receiving passageway intersecting the at least one conductor receiving passageway. The claim further recites at least one fastener positioned in the at least one fastener

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receiving passageway for securing the conductor within the at least one conductor receiving passageway and at least one insulating boot associated with the at least one conductor receiving passageway.

Moreover, independent Claim 1 has been amended to recite an insulating tube having an open proximal end received onto said conductive body, said insulating tube comprising a continuous sidewall. Claim 1 further recites at least one rupturable seal closing the insulating tube and rupturing upon initial insertion of the cable end therethrough, with the at least one rupturable seal also being compliant to accommodate different sized cable ends and form a seal with adjacent portions of the cable end.

All of the other independent Claims 14, 27, 39, 49, 58 and 66 have been similarly amended to recite that the insulating tube has an open proximal end received or to be received onto the conductive body. All of these other independent claims have also been amended to recite that the insulating tube comprises a continuous sidewall.

## **II. Claims 1-13 and 66-78 Are Patentable**

The Examiner rejected independent Claims 1 and 66 over either McGrane and Hills et al., or McGrane and Mucci. Considering first the rejection under McGrane and Hills et al., the Examiner correctly notes that McGrane does not disclose the insulating boot with at least one rupturable seal. The McGrane patent discloses an enhanced manufacturing method for the SWEETHEART® connector described at paragraphs [0003] and [0004] of the present specification. The SWEETHEART® connector included a stepped diameter insulating

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boot that is severed to the proper diameter to provide a seal for a correspondingly-sized cable end.

The Hills et al. patent discloses three embodiments of a gel-filled closure for protecting a telecommunications terminal, yet permit insertion of a test probe to sense a signal on the terminal. The three embodiments disclosed in Hills et al. include:

- (1) a probe penetrable layer including reduced-thickness slits intersecting at a center point to form a series of adjacent pie-slice shaped sections;
- (2) a probe penetrable layer just having a reduced thickness; and
- (3) a probe penetrable opening wherein underlying encapsulant provides resealing after withdrawal of the probe.

McGrane et al. is directed to an electrical connector for power cables to be essentially permanently and securely connected together for power distribution. In contrast, Hills et al. is directed to a low-voltage telecommunications terminal to permit a probe to be temporarily connected and shortly thereafter removed. Applicants respectfully submit that these two references are directed to quite different technologies and to quite different problems.

Indeed, it is submitted that a hypothetical combination of McGrane and Hills et al. would produce the device of McGrane with a cut-off insulating boot, and wherein, the insulating boot would also have a small seal for temporary entry of a test probe. In other words, even this hypothetical combination of McGrane and Hills et al. would fail to produce

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the invention as recited in amended independent Claims 1 and 66, for example.

Moreover, it is unlikely that the low voltage (telecommunication) test probe seal of Hills et al. would ever be combined with the high voltage (power cable) connector of McGrane - because the references are for different applications, different voltages, and to address different problems. Instead, Applicants submit that the Examiner's selective combination of McGrane and Hills et al. is improperly based on hindsight gleaned from Applicants' own specification used as a road map to assemble disjoint pieces of unrelated prior art references. Accordingly, it is asserted that independent Claims 1 and 66 are patentable over the combination of McGrane and Hills et al.

Turning now to the rejection based upon McGrane and Mucci, the deficiencies of McGrane have been correctly noted by the Examiner and repeated immediately above. Mucci discloses an underwater connector including an insulating tubular body having opposing ends. Each end includes a respective end seal, and there is a respective seal just inward from each end seal. A conductor body is in the center of the insulating tubular body. Mucci does mention in passing that it can be configured for a bulkhead installation without further discussion. Mucci further discloses release and purge valves 9 and 10 with their associated sidewall openings provided in the insulating tubular body on each side of the conductive body.

In sharp contrast to the insulating tubular body (and conductor body in the medial portion) of Mucci with its multiple valves (and corresponding openings through its non-

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continuous sidewall), independent Claims 1 and 66 recite an insulating tube having an open proximal end received onto the conductive body, and with the insulating tube comprising a continuous sidewall.

It is also noted that Mucci is silent on any desirability or capability to accommodate different sized cable ends. Moreover, Mucci discloses guide rings 13 to keep the cable in line with the seals. The guide rings have a fixed inner diameter sized to receive the fixed outer diameter of the cable ends. In other words, Mucci teaches away from seals accommodating different sized cable ends, in sharp contrast to the claimed invention. Accordingly, even the selective combination of McGrane and Mucci fails to produce the claimed invention as recited in amended independent Claims 1 and 66.

Applicants respectfully submit that amended independent Claims 1 and 66 are patentable over the prior art.

In view of the patentability of these independent claims, it is also asserted that their dependent claims, that recite yet further distinguishing features of the invention, are also patentable. These dependent claims require no further discussion herein.

### **III. Claims 14-26 Are Patentable**

Independent Claim 14 was rejected over the combination of McGrane and Mucci. Each of these references has been discussed initially above. Independent Claim 14 has been amended to recite an insulating tube having an open proximal end received onto the conductive body, a distal end opposite the proximal end, and a medial portion between the

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proximal and distal ends. The insulating tube has been further described as comprising a continuous sidewall. The claim further recites a first seal at the distal end of the insulating tube and being penetrable upon insertion of the cable end therethrough, and a second seal at the medial portion of the insulating tube and being penetrable upon insertion of the cable end therethrough. The first and second seals are compliant to accommodate different sized cable ends and form respective seals with adjacent portions of the cable end.

The McGrane patent discloses a connector including a stepped diameter insulating boot that is severed to the proper diameter to provide a seal for a cable end. As noted above, Mucci discloses an underwater connector including an insulating tubular body having opposing ends. Each end includes a respective end seal, and there is a respective seal just inward from each end seal. A conductor body is in the center of the insulating tubular body. Valves 9 and 10 are provided in the insulating tubular body on each side of the conductive body.

In sharp contrast to the insulating tubular body (and conductor body in the medial portion) of Mucci with its multiple valves (and corresponding openings through its non-continuous sidewall), independent Claim 14 recites an insulating tube having an open proximal end to be received onto the conductive body, and with the insulating tube comprising a continuous sidewall.

As noted above, Mucci is silent on any desirability or capability to accommodate different sized cable ends. Mucci discloses guide rings 13 to keep the cable in line with

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the seals. The guide rings have an inner diameter sized to receive the outer diameter of the cable ends. Mucci teaches away from seals accommodating different sized cable ends, in sharp contrast to the claimed invention. Accordingly, even the selective combination of McGrane and Mucci fails to produce the claimed invention as recited in amended independent Claim 14. The Examiner also appears to be using impermissible hindsight to selectively combine bits and pieces of McGrane and Mucci in an attempt to produce the claimed invention.

Applicants respectfully submit that amended independent Claim 14 is patentable over the prior art. In view of the patentability of this independent claim, it is also asserted that its dependent claims, that recite yet further distinguishing features of the invention, are also patentable. These dependent claims require no further discussion herein.

#### **IV. Claims 27-38 Are Patentable**

The Examiner rejected independent Claim 27 as unpatentable over Mucci alone. Amended independent Claim 27 is similar to amended independent Claim 14 discussed immediately above, but is directed to the subcombination of the insulating boot.

As noted above, in sharp contrast to the insulating tubular body (and conductor body in the medial portion) of Mucci with its multiple valves (and corresponding openings through its non-continuous sidewall), amended independent Claim 27 recites an insulating tube having an open proximal end received onto the conductive body, and with the insulating

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tube comprising a continuous sidewall. The first and second seals are also recited as being compliant to accommodate different sized cable ends and form respective seals with adjacent portions of the cable end

Mucci is also silent on any desirability or capability to accommodate different sized cable ends, and, indeed, Mucci discloses guide rings 13 to keep the cable in line with the seals. Mucci teaches away from seals accommodating different sized cable ends, in contrast to the claimed invention. Accordingly, Mucci fails to disclose the claimed invention as recited in amended independent Claim 27.

Applicants respectfully submit that amended independent Claim 27 is patentable over the prior art. In view of the patentability of this independent claim, it is also asserted that its dependent claims, that recites yet further distinguishing features of the invention, are also patentable, and these dependent claims require no further discussion herein.

#### **V. Claims 39-48 Are Patentable**

The Examiner also rejected independent Claim 39 over the Mucci patent alone. Independent Claim 39 has been amended similar to independent Claim 27 discussed above. Independent Claim 39 further recites that the second seal is integrally formed with the continuous sidewall of the insulating tube at a medial portion thereof.

In contrast to the insulating tubular body (and conductor body in the medial portion) of Mucci with its multiple valves (and corresponding openings through its non-continuous sidewall), amended independent Claim 39 recites an



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insulating tube having an open proximal end received onto the  
conductive body, and with the insulating tube comprising a  
continuous sidewall.

In addition, independent Claim 39 recites that the second seal is integrally formed with the continuous sidewall of the insulating tube. Mucci discloses that the second seal 3 and insulating tube 1 are separately made and assembled components as seen in FIG. 1. Mucci discloses that the insulating tube is made of "plastics material" and that the second seal is made of "a resilient material such as neoprene." (Col. 1, line 57, and col. 2, line 1). In other words, Mucci also teaches away from this "integrally formed" feature of amended independent Claim 39.

Applicants submit that amended independent Claim 39 is patentable over the prior art. In view of the patentability of this independent claim, it is also asserted that its dependent claims, that recites yet further distinguishing features of the invention, are also patentable. These dependent claims require no further discussion herein.

#### **VI. Claims 49-57 Are Patentable**

The Examiner rejected independent Claim 49 over the Mucci patent alone. Independent Claim 49 has been amended similar to independent Claim 27 discussed above. Independent Claim 49 further recites a sealant material within the insulating tube between the first and second seals.

In contrast to the insulating tubular body (and conductor body in the medial portion) of Mucci with its multiple valves (and corresponding openings through its non-continuous sidewall), amended independent Claim 49 recites an

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insulating tube having an open proximal end received onto the  
conductive body, and with the insulating tube comprising a  
continuous sidewall.

Accordingly, Applicants submit that amended independent Claim 49 is patentable over the prior art. In view of the patentability of this independent claim, it is also asserted that its dependent claims, that recites yet further distinguishing features of the invention, are also patentable, and these dependent claims require no further discussion herein.

#### **VII. Claims 58-65 Are Patentable**

The Examiner rejected independent Claim 58 over the Mucci patent alone. Independent Claim 58 has been amended similar to independent Claim 27 discussed above. Amended independent Claim 58 also recites at least one rupturable seal having a percentage elongation to yield of not less than about 300 percent to thereby be compliant to accommodate different sized cable ends.

In contrast to the insulating tubular body (and conductor body in the medial portion) of Mucci with its multiple valves (and corresponding openings through its non-continuous sidewall), amended independent Claim 39 recites an insulating tube having an open proximal end received onto the  
conductive body, and with the insulating tube comprising a  
continuous sidewall.

Mucci is also silent on any desirability or capability to accommodate different sized cable ends, and, indeed, Mucci discloses guide rings 13 to keep the cable in line with the seals. The guide rings have an inner diameter

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sized to receive the outer diameter of the cable ends. Mucci teaches away from seals accommodating different sized cable ends, in contrast to the claimed invention. Accordingly, Mucci fails to disclose the claimed invention as recited in amended independent Claim 58.

Mucci does disclose that the second seal is "made of a resilient material such as neoprene", but fails to disclose that the seal has a percentage elongation to yield of not less than about 300 percent to thereby be compliant to accommodate different sized cable ends, as recited in amended independent Claim 58. This is yet another independent patentable distinction over the Mucci patent.

Accordingly, Applicants submit that amended independent Claim 58 is patentable over the prior art. In view of the patentability of this independent claim, it is also asserted that its dependent claims, that recites yet further distinguishing features of the invention, are also patentable. These dependent claims require no further discussion herein.

#### VIII. Conclusions

In view of the amendments to the claims and the arguments presented herein, it is submitted that all of the claims are patentable. Accordingly, a Notice of Allowance is respectfully requested in due course. Should any minor informalities need to be addressed, the Examiner is encouraged

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to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Christopher F. Regan", written over a horizontal line.

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**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 15<sup>th</sup> day of April, 2005.

A handwritten signature in black ink, appearing to read "Justin Dan", written over a horizontal line.